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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,885	04/16/2004	John J. Waycuilis	200306 USA	1419

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EXAMINER	
NGUYEN, TAM M	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/826,885	WAYCUILIS, JOHN J.	
	Examiner	Art Unit	
	Tam M. Nguyen	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/11/06, 4/7/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 11, 2006 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for bromine vapor, does not reasonably provide enablement for bromine is other states such as liquid or solid. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. As described in the specification, enablement is provided for a gaseous feed having lower molecular weight alkanes with **bromine vapor**. The limitation "bromine" would include bromine in liquid state or solid state which is not enable by the specification and undue experimentation would be required to determine how the reaction is effective when bromine is in solid state or liquid state.

Claims 1-21, 24, 25, and 28-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation that alkyl bromides are reacted with an oligomerization catalyst in the absence of hydrobromic acid was not described in the specification at the time the invention was filed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21, 24, 25, and 28-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The expression "reacting said alkyl bromides in the presence of a synthetic crystalline alumino-silicate catalyst" in claims 1 and 18 renders the claims indefinite because it is unclear if hydrobromic acid is present in the reaction step.

The expression "introducing said alkyl bromides into a second reactor" in claim 29 renders the claims indefinite because it is unclear if hydrobromic acid is present in the reaction step.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-31 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. 11/101,886. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims draw to a process for converting gaseous alkanes to liquid hydrocarbon by reacting the gaseous with bromine vapor. The copending claimed set does not specifically claim that the synthetic crystalline alumino-silicate catalyst is ZSM-5.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of copending claimed set by using ZSM-5 catalyst as a crystalline alumino-silicate catalyst because one of skill in the art would use any crystalline alumino-silicate catalyst including ZSM-5 with the expectation that any crystalline alumino-silicate catalyst would result in similar outcomes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5-7, 16, 18, and 20-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Ivan Lorkovic et al "Alkan Oligomerization for the Production of Alkanes, Olefins, Alcohols, Ethers, Fuels, and Aromatics" Pages 1-6.

Ivan discloses a process for producing a lower alkane (e.g., natural gas) to liquid hydrocarbons by reacting the alkane with bromine to form a product mixture comprising alkyl bromides (e.g., methyl bromide) and hydrobromic acid. The mixture is then passed into a second reaction zone to convert the alkyl bromides to form higher molecular weight hydrocarbons. The second reaction zone is operated at a temperature of from 20 to 900°C and employed a crystalline alumino-silicate such as a zeolite. The zeolite is modified by ion exchange with calcium. Hydrohalic acid (e.g., hydrobromic acid) produced in the process is converted to halogen for reused. (See entire document)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 4, 8-20, and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ivan Lorkovic et al "Alkan Oligomerization for the Production of Alkanes, Olefins, Alcohols, Ethers, Fuels, and Aromatics" Pages 1-6.

Ivan discloses a process for producing a lower alkane (e.g., natural gas) to liquid hydrocarbons by reacting the alkane with bromine to form a product mixture comprising alkyl bromides (e.g., methyl bromide) and hydrobromic acid. The mixture is then passed into a second reaction zone to convert the alkyl bromides to form higher molecular weight hydrocarbons. The second reaction zone is operated at a temperature of from 20 to 900°C and employed a crystalline alumino-silicate such as a zeolite. The zeolite is modified by ion exchange with calcium.

Hydrohalic acid (e.g., hydrobromic acid) produced in the process is converted to halogen for reused. (See entire document)

Ivan does not specifically disclose that the bromine is substantially dry, does not disclose that the natural gas is treated to remove carbon dioxide and sulfur compounds, does not specifically disclose that the zeolite is ZSM-5, does not specifically disclose a step of removing hydrobromic acid as claimed, and does not disclose a step of dehydrating the higher molecular weight hydrocarbons to a dew point of about 20° C or less.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Ivan by using substantially dry bromine because pure bromine would eliminate the production of undesirable by-products.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified by using ZSM-5 because Ivan discloses that zeolites having different acidity and pore sizes can be used in the process depending on the desired products. Therefore, one of skill in the art would any zeolite including ZSM-5 zeolite when a particular product that ZSM-5 produced is desirable.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Ivan by removing hydrobromic acid as claimed because Ivan teaches that the step of neutralizing hydrohalic acid can be operating in the same reactor or in a distinct reactor. One of skill in the art would utilize any method of removing hydrobromic acid including the claimed steps of removing hydrobromic acid since the steps are known and effective to remove the acid and how the acid is removed in a distinct reactor would not affect the outcome of the process.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Ivan by employing a step of dehydrating the higher molecular weight hydrocarbons to a dew point of about 20° C or less as claimed because it is within the level of one of skill in the art to dehydrate the product to meet a certain requirement.

Response to Arguments

The argument that the instant application is the "earlier filed application" and as the ODP rejection is the only rejection of record, the need for filing a terminal disclaimer in the instant application is obviated and the ODP should be withdrawn is not persuasive. As pointed out by the applicant under M.P.E. P. §804 I.B, the earlier filed ODP rejection is withdrawn **only when the later-filed application is rejected on *other grounds*.** In addition, if "provisional" ODP rejections in two applications are the only rejections remaining in those applications, the ODP rejection in the earlier filed application is withdrawn **only when a terminal disclaimer is filed in the later-filed application**. Since the later filed application has not been examined, there is no way to know whether or not the later filed application is rejectable on other grounds and the applicant has not filed a terminal disclaimer in the later-filed application, the ODP rejection is maintained. It is also reminded that the earlier filed application is rejected on other grounds.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tam M. Nguyen
Examiner
Art Unit 1764

TN